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Establishment of Group II Terminal Control Area, San Diego, California

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Airspace Docket No. 18605/79-AWE-17]

Establishment of Group II Terminal Control Area, San Diego, Calif.

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule and denial of petition for rulemaking.

SUMMARY: This amendment establishes a Group II Terminal Control Area (TCA) at San Diego, California. The adoption of a TCA at San Diego was initially proposed as part of a comprehensive FAA program announced by the Administrator on December 27, 1978, for enhanced safety of flight operations in the national airspace system. This action will increase the capability of the Air Traffic Control (ATC) system to separate all aircraft in the terminal airspace around San Diego International Airport (Lindbergh Field) while providing sufficient flexibility to permit aircraft operating under visual flight rules (VFR) to operate within or outside the TCA. The TCA adopted by this amendment is the product of discussion with a broad representation of the aviation community. In conjunction with this action, the FAA will work cooperatively with local user groups to ensure the TCA is effective for all users by identifying any adjustments or modifications that appear necessary. Through joint FAA and user cooperation, any problems that arise can then be identified and corrective action taken when necessary.

This amendment also announces the decision to deny a petition for rulemaking from the Aircraft Owners and Pilots Association (AOPA) which requested, as an alternative to the proposed TCA, the designation of "safety corridors" for operations to and from San Diego International Airport. The reasons for this action are set forth at length in this preamble; however, the FAA would like to recognize the extensive amount of general aviation input that has gone into the construction of the final rule from the San Diego community.

EFFECTIVE DATE: May 15, 1980.

FOR FURTHER INFORMATION CONTACT: Mr. William E. Broadwater, Airspace and Air Traffic Rules Division (AAT-200), Air Traffic Service, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone (202) 426-3731.

SUPPLEMENTARY INFORMATION:

Background

On December 27, 1978, the Administrator of the Federal Aviation Administration announced his Plan for Enhanced Safety of Flight Operations in the National Airspace System. As part of this comprehensive program, the FAA proposed to establish a Group II Terminal Control Area (TCA) at San Diego, California, with operations in the proposed TCA subject to the operating and equipment rules for Group II TCAs specified in § 91.90(b) of Part 91 of the Federal Aviation Regulations. This includes, among other rules, the requirement to have an operable VOR/TACAN receiver, two-way radio, and a transponder to operate in the TCA. An altitude encoder would not be required.

User Group Participation

The TCA configuration adopted here has been developed through substantial public participation. Initially, numerous meetings were held with known local groups and individuals representing both the VFR and IFR aviation community to receive and discuss their needs and views for a preliminary TCA configuration. After those initial meetings, a tentative TCA configuration was prepared for further public discussion at subsequent local informal airspace meetings. An extensive publicity effort was undertaken through press, radio, and TV coverage to invite all interested persons to participate in those meetings. In addition to published notices, the FAA made a bulk mailing to hundreds of persons believed to have an interest in the proposal. As a result of those efforts, further adjustments to the TCA configuration were made and were reflected in the FAA's modified corridor configuration proposed formally for adoption. An additional opportunity for public participation was provided by a notice of proposed rulemaking (Airspace Docket No. 18605/79-AWE-17) published in the Federal Register on December 6, 1979 (44 FR 70181). Approximately 2,000 comments were received in response to the notice. Due consideration has been given to these comments as well as the comments received at the various meetings.

Changes To Accommodate VFR Traffic

Since the original development of a preliminary TCA configuration for discussion with airspace users, numerous changes in the configuration have been made to accommodate VFR activity. Initially, the proposed San Diego TCA design was configured as an expanded version of the San Diego TRSA with a southern boundary along the U.S./Mexican border and extending out past 40 nautical miles in all other directions. It did not include a VFR corridor. Based on user input and careful analysis of IFR and known VFR traffic flows, a multi-tiered design was developed and large blocks of airspace north and northeast of Lindbergh Field which were not essential to contain the existing traffic flow within the TCA were eliminated.

Further, in response to suggestions at the local airspace meetings, the FAA incorporated several other changes into the proposed TCA configuration, including a north-south VFR corridor over San Diego International Airport (Area A) from 3,300 feet to and including 4,700 feet. This corridor through Areas A and I allows free transit of VFR aircarft through the approximate center of the TCA.

Another change was made in the Mission Valley area (Area J) based on comments concerning possible compression of VFR traffic beneath the TCA floor. It was agreed that raising the floor to 4,800 feet would not derogate safety or ATC service within that area. Also, Area G was developed from Area C and D after it was determined that parachute and glider operators in the Lower Otay Reservoir Area would be unduly penalized if the floors remained at 3,500 and 4,800 feet, respectively. The floor was raised to 7,800 feet to permit continued use and was incorporated in the proposal.

Further, in response to concerns about the effects the TCA would have on VFR operations, the FAA will develop and disseminate materials depicting the TCA, together with VFR routes to facilitate VFR operation in the San Diego terminal area. Those materials will also include appropriate communication frequencies and other pertinent and helpful information.

Future Airspace User Input

In conjunction with the implementation of this rule, the FAA's Western Regional Office will invite interested persons to participate in joint FAA/user working groups to assist in evaluation of the effectiveness and workability of the San Diego TCA. This is in addition to the on-going airspace review responsibilities of the region. All comments and recommendations made by the group will be given full consideration by the region and could be the basis for subsequent changes necessary to eliminate any problems that may develop.

The AOPA Petition for Rulemaking

The FAA received a petition for rulemaking from the Aircraft Owners and Pilots Association (AOPA), on behalf of its members, to initiate rulemaking proceedings leading to an amendment to Part 93 of the Federal Aviation Regulations to establish a special air traffic rule for San Diego International Airport (Lindbergh Field). That petition, which was published for public comment in the Federal Register (44 FR 78177; December 6, 1979), requested the FAA to establish specified "designated safety corridors" for arrivals and departures of aircraft to and from San Diego International Airport. At the time the petition was published, the FAA indicated the petition was not itself proposing amendment to the rules, but was being considered apart from the notice proposing this amendment and that disposition would be made only after due consideration of the petition on its merits in accordance with the applicable provisions of Part 11 of the Federal Aviation Regulations.

After a thorough review of the docketed responses to the petition and the responses to the notice which proposed this amendment, it became clear that the two were so related that they should be discussed and acted on together.

The Need for Increased Positive Control in Terminal Airspace

The departure and arrival phases of flight result in a high concentration of aircraft in a relatively limited volume of airspace surrounding an airport. Aircraft density is a function of the number of aircraft using that airport and its proximity to one or more adjacent airports that share or abut that airspace. As air traffic activity at an airport increases, the need for increasingly precise control of aircraft and protection of airspace from unknown aircraft becomes essential for continued safe operations. The FAA has developed a spectrum of air traffic procedures which, when coupled with precision navigational aids, airport surveillance radar facilities, automated radar data processing capability, and a highly skilled work force, forms a comprehensive system to provide safe and efficient flight operations at all controlled airports. The scope of services range from simple, recommended airport traffic flows at lowest density airports, to TCAs at the busiest airports.

This action extends and enhances the application of these proven control techniques and subsystems to airports in the San Diego area and assures greater protection of VFR and IFR air traffic in the airspace surrounding this area.

An analysis of the overall need for extending the ability of ATC to separate visual flight rules (VFR) aircraft and instrument flight rules (IFR) aircraft in terminal airspace is contained in the Administrator's Plan for Enhanced Safety. A copy of the plan and other documents referred to in this amendment have been filed in the Rules Docket.

The "Highest Degree" of Air Transportation Safety

Near midair collision statistics indicate that, for all classes of users of terminal airspace, ATC separation services, in addition to the duty of pilots to see and avoid each other, results in a higher level of air traffic safety. For the millions of air carrier passengers who enter and leave the major air terminals each year, Congress has directed that the highest feasible degree of safety be achieved. The FAA has determined that a continued "mix" of ATC controlled aircraft and uncontrolled VFR aircraft can interfere unnecessarily with this high safety objective. While that position applies generally, it is particularly pertinent to the San Diego terminal area.

The Congressional mandate is clear with respect to the high level of safety intended for passengers in air transportation. Section 601 of the Federal Aviation Act of 1958 requires that the FAA give full consideration to the duty resting on air carriers to perform their services with the "highest possible degree of safety in the public interest * * *"

This Congressional concern for air transportation, as a distinct class to be protected, was restated in the Airline Deregulation Act of 1978 (Pub. L. 95-504, October 24, 1978) which amended § 102 of the Federal Aviation Act of 1958 to emphasize the "dedication of the Congress to the furtherance of the highest degree of safety in air transportation and air commerce, and the maintenance of the safety vigilance that has evolved within air transportation and air commerce and has come to be expected by the traveling and shipping public" (49 U.S.C. § 1302(a)). The Airline Deregulation Act of 1978 also directed the Secretary of Transportation ("Secretary") to complete a thorough review of the safety regulations applicable to air carriers in order to ensure that "all classes of air carriers are providing the highest level of safe, reliable air transportation to all the communities served by those air carriers." The Administrator is directed to respond to the Secretary's review by promulgating regulations that may be needed to "maintain the highest standard of safe, reliable air transportation in the United States." The orderly and extensive expansion of positive controlled airspace, including the amendments adopted by this action ensure that the local and system-wide capability of the FAA to ensure separation protection for air carrier passengers remains commensurate with the growth of a vigorous, safe, and efficient air transportation system under the new Act. By this action, the FAA is also increasing the degree of safety available to the general aviation community, many of whom are fully qualified to operate within the parameters of a TCA.

Building on Existing Programs

The FAA's experience since the establishment of mandatory TCAs and voluntary Terminal Radar Service Areas (TRSAs) indicates that, in terminal airspace, ATC control of VFR aircraft reduces the potential for hazardous traffic conflicts. For the year 1968 (which preceded the establishment of TCAs), the "Near Midair Collision Report of 1968," July 1969, concluded that, for the airports now served by TCAs, there were 271 incidents reported as "hazardous" to flight. For the fiscal years 1975, 1976, and 1977, there were a total of 64 reported near midair collisions (NMACs) in the 21 existing TCAs. For comparison purposes, this translates into an average of approximately 20 reported incidents per year, under TCA requirements, in contrast with 271 incidents for the year 1968. These figures are not conclusive indicators of the absolute numbers of incidents, but are viewed as meaningful evidence of the critical relationship between the absence of control of all aircraft and the likelihood of hazardous traffic conflicts in congested terminal airspace.

As a result of public comments in response to Notice No. 78-19 (44 FR 1322, January 4, 1979), questioning the adequacy of FAA's near midair collision information, a comprehensive review of that information has been undertaken. The results of this review are discussed under the "Discussion of Comments—Safety."

The San Diego TCA adopted by this amendment is a logical extension of programs that first gained momentum in 1962. In addition to the earlier nonregulatory programs, the 1970 National Radar Program initiated the regulatory development of TCAs, also in response to the 1968 Near Midair

Collision Report. the TCA concept was added to the Federal Aviation Regulations in Amendments 71–6 and 91–78, which were published in the Federal Register (35 FR 7782) on May 21, 1970, to be effective on June 25 of that year. Those amendments followed extensive public comment in response to Notice No. 60–41, issued on September 30, 1969 (34 FR 15252); 22 public meetings; and a supplemental notice of proposed rulemaking (Notice No. 69–41B) issued on March 11, 1970 (35 FR 4519). That regulatory history led to the issuance of § 71.12 of Part 71 of the Federal Aviation Regulations, under which individual TCAs are established, and § 91.90 of Part 91 of the Federal Aviation Regulations, which describes the equipment and operating rules for participating in a TCA. While the safety enhancement plan identified 44 new potential locations for Group II TCAs, the regulatory basis for, and description of, the TCA concept was established under these 1970 amendments to Parts 71 and 91. It should be noted that the 44 additional locations were only proposals. Each site is being evaluated on its own merits. In fact, to date the FAA's analysis has led to dropping seven terminal areas from the original list. The evaluation is continuing with the very real possibility that other sites may be dropped even before the issuance of a notice of proposed rulemaking.

The establishment of a Group II TCA at San Diego is an important and timely step forward and represents a meaningful contribution to the local and system-wide increase in safety because it responds specifically to the conditions that exist in the San Diego area. The design will safely accommodate the present traffic flow of all user groups in the TCA and the overall traffic flows of adjacent areas that interface with San Diego while minimizing the impact on operation of aircraft not operating in the TCA. This TCA design is based on existing traffic flows, airport locations, and navigation aid locations. It is part of an evolutionary growth process and is workable immediately. Other plans offered in response to the notice of proposed rulemaking and AOPA's petition for rulemaking, while having some attractive features or advantages for some airspace users, would have less attractive aspects and disadvantages for other airspace users. Some would require major modification to airspace route structure or procedures and, in some cases, relocation of navigation aids. Consequently, a prohibitive amount of time would be required to implement them with little or no appreciable gain in safety having been shown. However, as experience is gained with this TCA, the FAA will work with the local aviation interests to ascertain whether future changes should be considered to better accommodate all of the airspace users.

Discussion of Comments

In response to the TCA proposal and the AOPA petition, the FAA has received almost 3,000 written comments from individuals, citizens groups, local and Federal governmental officials and agencies, pilots and owners of aircraft, and aviation trade/industry associations. In addition, the FAA has had the benefit of considerable dialogue at user group meetings. The FAA appreciates the thoughtful and meaningful contributions and the interest expressed by all of those who took time to participate in the several steps of this rulemaking proceedings.

In responding to the issues involved in the FAA's proposal, many commenters made suggestions for achieving flight safety in the San Diego terminal area that were either alternative, or supplementary, to those proposed in the notice. Many of those suggestions have some attractiveness but go beyond the scope of the notice and thus could not be adopted at this time. Those comments are under study by the FAA's Western Region for consideration in future rulemaking action.

A somewhat contradictory pattern of comments emerged. Certain commenters argued that no additional regulatory action is needed either because the underlying problem is the failure of the current system to perform as effectively as it should or because the flight of aircraft is already overregulated.

Another line of comments stated that the FAA's proposal did not go far enough or move fast enough toward banning all small airplanes from operating in the San Diego terminal area. Other commenters recommended establishing a Group I rather than Group II TCA. The divergence of opinion is illustrated by the general positions of several of the aviation trade/industry associations, other airspace user groups, and the National Transportation Safety Board.

The Aircraft Owners and Pilots Association (AOPA) opposed the establishment of a Group II TCA at San Diego and supported its own "counter proposal," for special air traffic rules to establish "safety corridors" to and from Lindbergh Field. The Air Transport Association of America (ATA), on behalf of its member air carriers, urged immediate action to establish a TCA at San Diego and strongly argued that it should be a Group I TCA rather that the Group II TCA proposed by the FAA. The Professional Air Traffic Controllers Organization (PATCO) and the Air Line Pilots Association (ALPA) also supported a Group I TCA in San Diego with some suggested modifications in the configuration. Recommendations from the National Transportation Safety Board (NTSB) called for immediate implementation of a "mandatory terminal radar service area" pending establishment of the proposed Group II TCA (which it supported) but further recommended that aircraft operating in the San Diego TCA should be required to have an altitude reporting encoder. The National Business Aircraft Association (NBAA) reservedly supported the FAA's proposal expressing its concerns and suggestions about several aspects of the action. The Experimental Aircraft Association (EAA) contributed its suggestions on how best to achieve the enhanced safety objectives and recognized that special considerations apply to the establishment of a TCA for San Diego terminal area. The U.S. Navy agreed with the need for a TCA, which includes NAS Miramar, and the general configuration; however, they objected strongly to the VFR corridor over the North Island Control Zone and suggested requiring altitude encoders and deleting the VFR corridor.

The great majority of the commenters simply opposed establishing a Group II TCA in San Diego and favored the AOPA petition. The basis offered by the great majority of commenters presented strikingly similar reasons and little, if any, elaboration or analysis to assist the FAA's evaluation of the matters presented. Most of the comments received came from pilots and owners of general aviation airplanes who stated their general objections to the TCA concept and its application in San Diego and their equally general support for the AOPA alternatives.

As in most proceedings of this kind, the public beneficiary of safety regulation does not have an organizational basis to participate and they do not traditionally present their views in significant numbers to counterbalance the advocacy of the more institutionalized commenters. This does not, however, reduce the viability of the public benefits that may be achieved if an otherwise beneficial proposal is adopted.

In reviewing the comments on both the FAA proposal and the AOPA petition, substantial common elements were noted. Moreover, many of the comments to the TCA referenced the

AOPA petition and vice-versa. Accordingly, the comments from both proceedings are being discussed together to reflect that the issues common to each were fully and efficiently considered.

A. Safety

The primary concern in any proposed TCA action is providing the highest degree of safety while preserving the most efficient use of the available terminal airspace. The TCA designates areas where air carrier aircraft are required to operate. This airspace is also available for use by properly equipped general aviation and military aircraft under an ATC clearance for operating in the airspace. This airspace, with its positive control of all aircraft, reduces the probability of near midair collisions. The inclusion of NAS Miramar within the San Diego TCA substantively contributes to safety and efficiency within the terminal area.

In the San Diego terminal area, the mix of aircraft is substantial. Within 15 nautical miles of San Diego International Airport, there are three general aviation airports (Montgomery, Brown, and Gillespie) and three military airports (NAS Miramar, NAS North Island, and NAS Imperial Beach). In calendar year 1978, for example, the seven airports generated in excess of 1.2 million aircraft operations. The proximity of these airports contribute to the collision potential between controlled and uncontrolled aircraft in the San Diego terminal airspace. To date in 1980, there have been several purported near midair collisions reported in the San Diego terminal area. In all but one instance, uncontrolled VFR general aviation aircraft were involved. The mix of various types of aircraft using the airspace in and around San Diego International Airport also make it highly desirable to add the assurance that the flight paths of air carrier and other transponder equipped aircraft using this airport are contained within airspace free of uncontrolled aircraft.

Many commenters referred to the near midair collision draft report originated by the National Aeronautics and Space Administration (NASA) as support for the proposition that TCAs do not enhance safety. These commenters frequently stated that the NASA report was based on more recent information and indicated that more near midair collisions occur within the confines of a TCA than in other terminal airspace areas.

The FAA has reviewed that draft report and the underlying data on which it is based. The data used to originate the NASA Draft Report was produced under the Aviation Safety Reporting System (ASRS). The ASRS is a voluntary reporting system and the commentaries received are not investigated to verify the specific information they contain. Consequently, incomplete, inaccurate, and multiple reports have been filed on the same incident and counted as individual incidents. In its findings, NASA reminds the reader of the limitations of the program. The FAA obtained copies from NASA of all data base incidents (July 1, 1976, to November 30, 1978). These 2,965 nation-wide reports were analyzed using the near midair collision criteria as defined by both the FAA and NASA. Of those, 1,303 clearly did not meet the criteria and 301 were duplicate reports.

The remaining 1,361 near midair collision reports were analyzed in light of the conclusions offered in the NASA Draft Report. The NASA Draft Report presented a comparison of terminal airspace at all locations covered by reports (low density to high density) and concluded that most hazardous incidents occur in high density areas. That is a primary reason why the FAA embarked upon the program to establish TCAs and TRSAs in those high density areas. Contrary to the impression of many commenters, the NASA Draft Report did not address the effectiveness of TCAs after they were established compared to the number of incidents reported before they were created. As noted previously, the FAA's data that shows that after establishing a TCA there have been fewer hazardous incidents in that airspace than there were before it was established.

B. Efficiency

There were numerous comments that the proposed TCA configuration is an inefficient use of airspace and would benefit only a fraction of the airspace users.

To design a safe and efficient positive control environment in a terminal area, it is necessary to tailor the airspace configuration to the spacific needs of that area. The various types of aircraft that operate within the system and the basic requirements of all airports within the terminal area must be considered, along with the constraints imposed by terrain, weather conditions, and optimum traffic flows. In the case of the San Diego area, additional consideration must be given to the presence of an international border, the Pacific Ocean, and areas set aside for national defense purposes. The San Diego TCA was designed with all these considerations in mind. These considerations also underpin the seemingly complex design of the TCA, and are discussed under the heading "Discussion of Comments—Complexity."

The routes and procedures currently used in the San Diego area have evolved through a carefully planned system of navigational aids and airways dictated by the factors mentioned, plus airport locations and the needs of the users. A description and graphic of the current traffic flows, airways, and navigational aids were prepared for evaluating the proposed TCA and are filed in the docket. The TCA configuration adopted by this rule has in turn been developed to accommodate the present traffic flow and procedures in the San Diego area as well as the traffic flow to and from the high volume areas that interface with San Diego Approach Control. If current traffic flow and procedures were to be changed, it would mean significant delays in establishing the TCA

The San Diego air traffic control system has been operating with a terminal radar service area (TRSA) since April 19, 1979. The ATC service provided in a TCA is nearly identical to the service provided in a Stage III TRSA environment, the main difference being that participation within the TCA airspace is not voluntary. The controller workforce at the San Diego ATC facilities have been able to handle the additional workload created by the TRSA with very little impact on the user. There is no reason to anticipate that controller workload will increase to the extent that system efficiency would suffer. Moreover, it is conceivable that present efficiency could increase somewhat because controllers will be dealing primarily with airspace that contains only identified and known aircraft. This will greatly reduce the need to issue traffic advisories to known traffic concerning unidentified or unknown traffic in the area. Controllers may then devote more time to providing vectoring, spacing, and monitoring of flights, thus achieving a more efficient traffic flow as well an enhanced levels of safety. However, incident to adopting this amendment, the FAA is initiating a pilot education program to enhance their awareness of the presence of the TCA and to assist them in developing the operational knowledge to fly in and around the TCA airspace in the most efficient manner.

C. Complexity

About half of the commenters expressed a general criticism of the proposed TCA because of its complex design. An even higher percentage of the comments on AOPA's petition favored the AOPA corridor design because of its relatively simple configuration. The

FAA is likewise desirous of simplicity in design; however, the AOPA's corridors are not compatible with the specific needs of the San Diego area or existing conditions, including navigation aids and traffic flow of both VFR and IFR aircraft.

In large measure, the complex TCA configuration is the result of an existing complicated airspace usage involving arrival and departure profiles to and from the numerous airports in the area and of the need to provide the desired level of safety without imposing unnecessary burdens on the users. It is necessary to use a multi-tiered configuration. A simpler configuration would not fully achieve the objectives of containing air traffic arrival and departure procedures within TCA airspace and would necessarily result in reduced safety margins or inefficient use of the airspace.

In addition to the airspace needs for aircraft serving Lindbergh Field, TCA complexity flows from the interrelated air traffic requirements and types of civil and military aircraft operating to and from other airports in the San Diego area, geographic constraints of terrain, prevailing winds, air traffic flows, an international border, and military offshore warning area. The TCA size and shape evolved from a review of, and experience with, the airspace usage needs. Sufficient area is provided to allow for vectoring and sequencing of aircraft to and from Lindbergh Field in order to promote timely movement of airplanes from or to any of the six other local airports. Airspace is provided for VFR access through the area and to accommodate glider operations, parachutists, and hang gliders.

The AOPA commented that the proposed TCA with its 17 sectors with varying "floors" is far too complicated for pilots to comprehend and apply in flight. They stated that pilots who wish to remain clear of the TCA would have extreme difficulty and would be required to refer to a terminal area chart and would become preoccupied and not free to look for traffic. They further stated that the traffic flows should be designed to fit sensible configurations. The AOPA also questioned how pilots can determine positions that are described by latitude and longitude or by surface highway numbering systems not visible from the air.

The pilot is not expected to use the written regulatory airspace descriptions for navigation purposes. VFR charts are provided for VFR navigation and IFR charts for IFR operations. The VFR charts have a substantial number of visual landmarks, including highly visible roadways, supplemented with navigation information to provide guidance in and around the TCA. A pilot must be able to use these aeronautical materials, particularly while flying in or near busy terminal areas. Pilots have been using those charts for years to successfully navigate in and around the existing TCAs. As previously indicated, the FAA will work with users to develop more effective VFR charts and materials to include available VFR routes and altitudes.

D. Cost

There were many comments received concerning added costs that would be incurred by the implementation of a TCA. These include (1) the cost to acquire and install the avionics equipment necessary to operate in the TCA, if the aircraft is not already so equipped, and (2) the operating costs to fly within the TCA environment or to avoid it. The TCA will immediately provide the basis for service to all aircraft that are properly equipped.

When considering the distribution of costs to the user, much has been said about it being the general aviation operators who are the most likely to incur the greater cost impact. To operate within the confines of the TCA, aircraft must be equipped with a transponder. From available data, it is estimated that 53% of the single-engine aircraft and 89% of the multi-engine aircraft based in the Southern California area are already equipped with a transponder. The operators of the remaining aircraft will have to elect to incur the cost of a transponder in order to achieve the enhanced level of safety and ATC services or to operate outside the TCA airspace. Nevertheless, the FAA has made a concerted effort to design the TCA to accommodate those who wish to avoid the TCA airspace and to minimize the potential risks of operating on the periphery of the TCA. However, the options are clearly posed for the election of each operator to pursue whichever is appropriate to that operator's situation.

The operating costs incurred by the transponder equipped operators who operate within the TCA airspace, as explained in the Airspace User Cost Impact Study, will be minimal. The FAA estimates that these costs can be equated in terms of a one-minute average ATC procedural delay during peak traffic periods. This delay is attributable, in part, to ATC procedures which include the time required to radar identify any VFR traffic and integrate that traffic into established IFR traffic flows.

Some commenters stated that additional costs will be incurred by aircraft attempting to avoid the TCA. The TCA has been configured to provide north-south, point to point VFR cross country flying with a minimal amount of additional flight time or fuel being expended. For example, aircraft using the VFR corridor would in many cases use no more fuel than at present, and aircraft choosing to avoid the TCA by diverting eastward under Areas C and J and over Area P would add about three miles to their flight paths. The distance between Tijuana (south of the TCA) and Palomar Airports (north of the TCA) is 41 miles direct and 44 miles via the flight path just described to avoid the TCA. The resulting increase in fuel is considered insignificant. In addition, if requested, ATC may clear aircraft without a transponder through the TCA when such operations can be handled without undue risk to other operations in the TCA. In instances, where circumnavigation of the TCA becomes necessary, the areas avoided are locations where several reported near midair collisions and hazardous encounters with uncontrolled aircraft have occurred.

Some flight training operations will incur additional costs since some current practice areas are within the TCA and may have to be relocated to more distant areas. The specific cost of these relocations cannot be determined without particular information about any new areas selected for training by those operators.

Several commenters stated that the implementation of a TCA would create additional costs for the ATC system because it requires a larger work force and the purchase of additional ATC equipment by the FAA. The controller work force levels are not adjusted for the day-to-day fluctuation of traffic. Currently, the daily traffic volume at San Diego Approach Control varies from 800 to 1600 operations. It is estimated that the average increase in number of aircraft handled would be no more than 10%. At the present time, the additional traffic would not necessitate adding controllers or ATC equipment. If future demands on the TCA facilities do occur, of course, the FAA will not hesitate to make appropriate additions necessary to alleviate any problems that actually develop.

E. Airspace Use Distribution

Many commenters stated that most of the airspace in the FAA proposal was reserved for use by only 10% of the traffic (in terms of the total number of operations). The FAA recognizes the competing interests for use of the affected airspace and has fully considered those interests in adopting

this configuration. The 10% figure cited by many commenters fails to reflect the ability of many general aviation aircraft and military aircraft to operate in the TCA. As previously discussed, available data indicates that 53% of the single-engine and 89% of the multi-engine aircraft based in Southern California are already equipped with a transponder. While the total number of operations is one factor to be considered, the number of enplaned passengers within the terminal area is also an important aspect of assessing the need for, and benefits of, establishing a TCA at a particular location. The number of enplaned passengers is a key factor in fulfilling FAA's responsibilities of providing the highest level of air transportation safety. Airplane operations do not necessarily reflect that concern without identifying the nature of those operations. In evaluating the establishment of the TCA at San Diego, both factors have been fully considered.

The FAA, for example, has incorporated into the TCA configuration a north-south VFR corridor over San Diego International Airport (through Area A) from 3,300 to and including 4,700 feet. This corridor has been designed to allow transit of VFR aircraft through the approximate center of Area A without the need for ATC clearance. Under TCA rules, those airplanes may also be permitted to fly through the TCA when ATC can accommodate a request to do so safely and without adversely impacting on the ATC system.

In response to comments concerning possible compression of VFR traffic in the area of Mission Valley (Area J), the floor was proposed at 4,800 feet after it was determined that this change would not derogate safety or ATC service within that area and would provide additional airspace outside the TCA for VFR traffic and other aircraft not equipped to operate within a TCA.

Similarly, Area G was developed from previous portions of Areas C and D after it was determined that parachute and glider operators in the Lower Otay Reservoir Area would be unduly penalized if the floors remained at the original 3,500 and 4,800 feet, respectively. The floor was accordingly proposed at 7,800 feet in this limited area so that these activities could continue outside of the TCA.

F. Controller Workload

A significant number of commenters felt that because of the increased control of VFR traffic, the TCA would impose an additional controller workload to the detriment of safety and providing ATC services. Conversely, there were many comments supporting the AOPA petition on the assumption that adoption of its recommendations would lessen controller workload. It is noted that neither of these arguments was made in the comments of the Professional Air Traffic Controllers Organization (PATCO) which urged immediate implementation of a TCA in the San Diego area, preferably a Group I TCA.

While it is anticipated that there will be a slight increase in the number of aircraft under positive control in the San Diego area, this increase has been estimated by the San Diego Approach Control facility to be less than 10%. This potential increase, however, is a necessary consequence of selecting the most effective overall airspace designation for safety and efficiency in the terminal area.

Notwithstanding the possible increase in the number of aircraft under positive control in the San Diego terminal area, the workload of the controllers servicing this area may actually decrease rather than increase. There is presently a mix of controlled and uncontrolled traffic in the San Diego area; the TCA will place all traffic under positive ATC control. This will result in VFR traffic operating at assigned altitudes and on assigned headings. The controllers will know the intent of all aircraft within the TCA which will obviate much of the need for traffic advisories presently issued in the TRSA.

Contrary to many of the comments, the AOPA recommendation would likely increase, rather than decrease, controller workload. For example, because of the narrowness of the particular corridors recommended, an aircraft on a missed approach could not be vectored back into approach sequence, but would have to be handled as a departure. Only after the aircraft has climbed to 12,500 feet, could it then be routed to, and sequenced back into, the arrival corridor.

The AOPA "safety corridors" would require all turbojet aircraft using Lindbergh Field to use the approach and departure corridors. This increases the controller's workload and difficulty of accomplishing his task and would not provide protection to passengers in nonturbojet airplanes.

During busy periods, because of their narrow lateral limits, sequencing within the corridors would become increasingly difficult. There is virtually no buffer space in which to vector aircraft for spacing. Additionally, because speed reductions frequently require an aircraft to level off or decrease the rate of descent, increased controller vigilance would be required to keep a decelerating aircraft from exiting the corridor and entering uncontrolled airspace where it could be exposed to the higher risks of hazardous flight conflict with aircraft not under ATC positive control.

The San Diego TCA is being adopted to provide airspace in which Air Traffic Control can better separate all aircraft operating within this congested terminal airspace. The primary consideration in its adoption is safety, even if there were some of the increased controller workload suggested by some commenters. The overriding safety advantages more than outweigh the nominal manpower factors involved. If controller workload does increase beyond FAA expectations, the FAA will commit additional resources to ensure that desired safety objective is achieved.

G. Compression of VFR Traffic Under the Terminal Control Area

Many commenters felt that the proposed configuration would create an undue compression of VFR traffic at dangerously low altitudes under the floors of the TCA. The compression effect, it was urged, would force uncontrolled aircraft to operate at relatively low altitudes in limited airspace over water or adjacent to mountainous terrain.

It is true that in some areas, aircraft operators who elect not to operate within the TCA airspace, will be also electing to conduct their operations over the same area at lower altitudes than they may presently operate. Every attempt, however, has been made to establish the floors of the TCA as high as possible. In most areas, adequate altitudes are provided for continued operations under normal conditions and in other cases the pilot must determine whether, under the existing conditions, the operation can be conducted safely. It is noted that most of the areas affected are those in which there is presently a higher risk of hazardous traffic conflict than that posed by the effects of the lower operating altitudes under visual flight conditions.

The elimination of certain VFR flights along flyways within the TCA results in a reduced collision potential in those areas where those airplanes operated before establishing the TCA because all airplanes in those areas would be separated by ATC. However, it can be assumed that operations might increase the traffic on flyways in those areas under and around the periphery of the TCA. The magnitude of that increase would relate to the level of increased activity in those areas and would depend on the elections of pilots to use those areas instead of the areas within

the TCA where the risks would be reduced. Conversely, it may also be assumed that operations on these flyways would not increase because of the natural dispersal of traffic by the configuration of the TCA. In the absence of specific data concerning the level of activity in those areas before establishing the TCA and the inability to anticipate the use of particular flyways by pilots electing to avoid the TCA, no specific factor of the relative collision risks can be projected. However, compared to the substantial collision risk reductions within the TCA, unless the risk increases dramatically outside the TCA, the overall effect of establishing the TCA would be positive for all airspace users. While no such increase is anticipated, or can be documented, the FAA will take any action necessary to ensure all operations are conducted safely.

The "compression" issue was also raised at the various informal airspace meetings which were held in the San Diego area to obtain public participation in the development of an airspace description. In response to the many helpful comments, the FAA had already incorporated several changes in the proposed TCA configuration and has adjusted the airspace, where possible, to offer the least adverse impact to satellite airports, potential terrain hazards, and specific types of operation. This was accomplished by adding a VFR corridor, raising the floor in the area of Mission Valley (Area J), and subdividing Areas C and D to create Area G with a higher floor. Those changes were recognized by the FAA to be beneficial to the users of the airspace and would also assist in relieving any unnecessary effects of compression beneath the TCA.

The intent of the FAA in proposing this TCA was to provide maximum freedom for all aircraft consistent with providing positive control and separation for those aircraft in the TCA. The configuration adopted by this amendment substantially achieves that goal.

H. Alternative Proposals

1. *AOPA Petition.* The AOPA's "safety corridors" have the virtue of simplicity in design, but, unlike the FAA's, modified corridor concept, do not permit the flexibility necessary for efficient application of ATC services and, thus, result in hidden complexity in ensuring safety and providing ATC services. Unfortunately, the AOPA's step-down, step-up ceilings along the corridors is neither viable nor workable in the San Diego area. This airport is basically a one runway, singled flow airport, with the direction of operations dependent upon local weather conditions that dictate which of the different traffic flows is used (west, east, and in certain conditions landing to the east and departing to the west). The configuration the procedures recommended by AOPA do not provide adequate airspace and procedural flexibility to allow vectoring and routing of all traffic to efficiently accommodate these flows while containing traffic within corridor airspace. Because the FAA recognizes the interest and work that went into the AOPA petition, it is useful to explain in considerable detail the difficulties implementation of that proposal would invoke:

a. Adoption of AOPA's corridors would require redesigning virtually all present arrival/departure routes that are in use in the San Diego area. As discussed under "Analysis of Comments—Efficiency," these routes are part of a carefully planned, evolving system. Any changes to the system, would cause far reaching impacts. For example, AOPA's Area "F" lies within the jurisdiction of three ATC facilities (San Diego Approach Control, Coast Approach Control, and Los Angeles Center). To reallocate the airspace in Area "F" would impact operations at all three facilities and require significant changes in their working relationships, including realignment of sector jurisdictions, communication links, radio frequency assignments, and possible staff reassignments. Further, Area "F" does not have the required lateral separation from Restricted Area R–2503. This restricted area is operated by the military continuously to 15,000 feet. To change or reallocate this restricted area would also require changes to be made in the three facilities mentioned above and could adversely impact the conduct of the national defense mission.

Further, recommended Area "J" lies within the airspace of two facilities (San Diego Approach Control and Los Angeles Center). In conjunction with Area "F," this change would adversely affect the overall traffic flows both into and out of San Diego Approach Control, Ontario Approach Control, and Los Angeles Center sectors, as well as their working relationships.

b. The AOPA's corridor's would create unacceptable delays for virtually all users because turbojets would not be able to maneuver for spacing and remain within the corridors. For example, recommended Areas "E" and "D" are extremely narrow for air traffic purposes. There is insufficient airspace for vectoring in these areas to achieve spacing and metering of inbound or outbound traffic. Arrival traffic into San Diego is handled by two facilities (Los Angeles Center and Coast Approach Control); this traffic is received with altitude separation but not always with in-trail, lateral spacing. The approach controller at San Diego could not accomplish the spacing function in that limited amount of airspace allowed by the corridor. Thus, holding at an outer fix frequently would be necessary. Conversely, departing traffic to the northwest is handed off to two different facilities. Again, adequate airspace is not available to achieve an in-trail flow of at least five nautical miles before transferring control. In this case, a delay on the ground would be necessary.

AOPA's Areas "C," "B," and "G" are also extremely narrow and would not provide room for vectoring to establish separation and normal flow of traffic. In other words, without the ability to vector for spacing, particularly with a mix of slow and fast aircraft, numerous delays would be encountered because the only alternative would be to hold aircraft at outer fixes or on the ground, until spacing can be achieved.

c. The AOPA's corridors would add about a 50% penalty in the distance and a proportionate increase in operating costs for aircraft, including general aviation aircraft, operating between San Diego and Los Angeles. Normally, arrivals would have to fly from Oceanside to Julian VORTAC rather than a relatively direct route from Oceanside to San Diego. When San Diego traffic is departing, flights with eastern destinations would be required to proceed northwest to Oceanside before proceeding east.

d. In the event of a runway change, if an aircraft were in the corridor inbound, the recommended corridors would make it impossible for the aircraft to remain in positively controlled airspace where hazardous traffic conflicts are minimized and yet execute an approach to the new runway.

e. The AOPA's corridors would present air traffic controllers with extreme handicaps in attempting to provide services within the narrow, positively controlled airspace. That would significantly increase controller workload, as previously discussed. This would also decrease the controllers ability to provide timely other services to aircraft, including general aviation aircraft.

f. AOPA's Area "A" lies within the Montgomery Airport traffic area with a ceiling of 3,000 feet. This would require coordination with Montgomery before any flight could proceed into Area "A." This area would further reduce a control zone that is already compressed between the control zones of the

Miramar NAS and Lindbergh Field. Aircraft movements in the southern half of the Montgomery Airport traffic area would require ATC clearance and extensive control coordination between San Diego Approach Control and the Montgomery Air Traffic Control tower. This could adversely affect VFR operations at Montgomery Airport. The 3,000 feet ceiling would overly restrict departures using that area. For example, normal performance rates have shown that turbojets would have to level off at 3,000 feet for several miles in order to stay within the "safety corridor."

g. APOA's Area "H" is also very narrow for ATC purposes and the base altitude is below the minimum vectoring altitude. This means that radar would not be effective in portions of Area "H" and would preclude the use of some ATC radar procedures. This area also crosses the Gillespie and Montgomery final approach courses, presently a potentially dangerous situation and it also lies within the Gillespie Airport traffic area. This area would require each VFR flight from Montgomery or Gillespie Airports flying via airway V-66 to the east to get an ATC clearance to transit the airport traffic area through Area "H."

h. The AOPA's areas do not offer any protection to, or consideration of, the high volume of Navy jet fighter operations to and from NAS Miramar or NAS North Island. Those operations in terminal areas must be reflected in any resulting configuration of positive control airspace because of the demonstrated effect those operations have on the safe and efficient use of the San Diego terminal area by civilian aircraft.

i. The AOPA, in their counter proposal, offered several recommended route changes. For the following reasons, the FAA is not able to adopt those changes:

(1) They do not conform to, and would be imcompatible with, established traffic flows of the adjacent ATC facilities—Los Angeles Center and Coast Approach Control.

(2) The routes depicted for arrivals from the east landing on Runway 9 all penetrate existing restricted areas; e.g., AOPA arrival from Imperial penetrates R-2510, which is designated to 20,000 feet continuously (sunrise to sunset, Monday through Friday, up to 50,000 feet). In addition, this routing would take air carrier aircraft into areas where military jets are climbing on approved departure routes from Miramar Naval Air Station, March Air Force Base, and El Toro Marine Corps Air Station.

(3) The route depicted for arrivals from the Twenty-nine Palms VORTAC and Parker VORTAC penetrates or passes dangerously close to Restricted Area R-2503 which is in use continuously to 15,000 feet. This route is not compatible with established traffic flows used by Los Angeles Center and Coast Approach Control.

(4) The arrival routes suggested from the northwest to Runway 27 at Lindbergh Field are longer and more time and fuel costly. Utilizing these routes would conflict with established military traffic flows creating serious safety hazards due to head-on and crossing traffic situations between air carriers and high performance military jets.

j. Other. The AOPA's recommendation does not provide airspace to contain aircraft executing missed approach procedures for ILS Runway 9. There is no provision made for arriving and departing aircraft to and from Mexico.

To summarize, the AOPA recommendations do not conform to existing traffic flows. They would have the effect of funneling aircraft into a much smaller geographic area, therefore requiring more control of traffic flow, and causing more fuel consumption, and additional rerouting for traffic around the San Diego area. They would require a major redesign of airspace use in several areas of the West and Southwestern United States. They do not consider the high volume of Navy aircraft operations to and from NAS Miramar, NAS North Island, or NAS Imperial Beach.

2. *Proposal of the Mayor of San Diego.* The Mayor of the City of San Diego submitted comments and an alternative proposal resulting from his efforts to reconcile the differences between the FAA proposal and the recommendations in the AOPA petition. The Mayor convened a meeting of airspace users that precipitated the several suggestions which have certain favorable aspects, such as simplicity, reduced amounts of airspace being dedicated to the TCA, and accommodations for use of the natural, VFR flyways without the need for ATC clearances. The following summarizes the major points of that recommendation and provides the reasons they are not acceptable at this time:

a. Reconfigure Area N so that its eastern boundary would be offshore in the proximity of a 320° radial of the Mission Bay VORTAC. The Mayor felt this would provide a VFR flyway for general aviation along the coastline.

The FAA design accommodates the specific need for a flyway in that area. For example, a northwest bound flight at 4,500 feet can proceed through the VFR corridor (through Areas "J," "O," and "N") out of the TCA airspace. A southbound flight can fly the reverse of that route at 3,500 feet. Further, with the exception of a 4.5-mile stretch along the coastline in Area O, the coastal area from the Mission Bay VORTAC to a point 4.5 miles Southeast of the Oceanside VORTAC is not TCA airspace and is an adequate flyway along the coastline for non-TCA aircraft. Area N, as defined in the FAA design, is necessary for efficient and safe operations when the Lindbergh departures are utilizing Runway 9. The base of Area N is 6,800 feet which provides room for VFR activity along airway V-23.

b. Amend the TCA proposal in Areas A, B, C, D, E, F, K, L, M, and possibly N, so that a one-way traffic flow to and from Lindbergh Field would be possible. The Mayor suggested this would reduce the risk of midair collisions over the Mission Valley approach to Areas J and A east of the field, by eliminating the downwind approaches to Runway 27. While it is not clear from the suggestion specifically what is contemplated, it appears that it would involve different TCA configurations depending on which direction takeoffs and landings are being made.

Lindbergh operations require flexibility allowing utilization of all runway directions and a changing TCA configuration would not ensure that all pilots would know which configuration was in effect or when it was changed from one to another. Depending upon weather factors an east flow or west flow of traffic is required. Each proposed TCA area was designed for the safe, and efficient operations that could be dictated in large measure by weather conditions. A changing TCA configuration would introduce unacceptable and unnecessary risk factors for operations in attempting to provide flexibility and reduce the amount of terminal airspace affected.

c. Provide a navigational aid east of Area C, so that a new flyway could be used to channel traffic to and from the northwest and Los Angeles. The Mayor suggested that the combination of this new flyway and the two suggestions previously discussed would "imaginatively change" the TCA to afford the "straight in and the straight out" objectives presented by AOPA.

A navigational aid to serve this area is currently budgeted for and should be installed by the Fall of this year. Adjustments in route structure and, thus, the TCA may result from the additional navigational aid at that time.

d. Retain the altitudes proposed by FAA in areas such as D, E, F, L, and M

to provide the "highest degree" of air transportation safety for air carrier service. The Mayor suggested this would be a distinct advancement over the level of protection in other TCAs. Absent the positive controlled airspace between the top of the TCA and the Continental Control Area, many near midair collision situations can develop. By adopting a modification of the AOPA concept which he called a "channel," as distinguished from a "corridor," it would appear feasible to have multiple (nonchannel) areas with the TCA top at 7,000 feet.

The flow of traffic in the San Diego area is unique with respect to the number of airports and the geographical location. For example, IFR flights into the Mexico airspace are generally required to cross the border at 13,000 feet. Jet traffic IFR into Miramar Naval Air Station proceeds through the TCA at 10,000 to 12,000 feet. The FAA's evaluation of traffic flows and complexity factors indicate that the 12,500-foot ceiling, as specified in the FAA design is required for conducting the safe and efficient operations in the San Diego area. If appropriate, based on sufficient operational experience with the TCA, the Area A and adjacent ceilings may be adjusted in the future.

3. *A Group I TCA should be installed instead of a Group II TCA, as proposed.* Numerous commenters recommended establishing a Group I TCA, rather than the Group II TCA proposed in Airspace Docket 18605/79–AWE–17, because it would provide an additional degree of control over aircraft operating in the TCA airspace.

The basic differences between Group I and II TCAs are that in a Group I TCA an altitude encoding transponder, and a private pilot rating or better are required. Those are in addition to the basic requirements for operating in a Group II TCA where a two-way radio, VOR or TACAN, and radar beacon transponder are required. Most commenters who recommended establishing a Group I TCA in San Diego focused on the need for the altitude encoder to provide an additional measure of safety.

Consideration of a requirement for an altitude encoder necessarily includes considering the particular circumstances presented in the terminal area that may tend to indicate that the flight information provided by an encoder would significantly enhance ATC's ability to control aircraft safely and efficiently. It is noted, however, that the level of ATC sevices provided is not different in a Group I TCA where an encoder is required.

Since the existing San Diego TCA proposal was to establish a Group II TCA, without supplementary notice and proceedings the additional requirements incident to a Group I TCA, including the requirement for an altitude encoder, could not be adopted without a compelling public interest basis. Whether carriage of an altitude encoder should be required in Group II TCAs generally or redesignate any particular Group II as a Group I TCA are issues whose importance transcends this rulemaking proceeding. An examination of them will be made under separate review. The FAA will monitor the effectiveness of the Group II TCA in San Diego and consider making whatever changes are necessary to provide an improvement, including implementing a Group I TCA or requiring an altitude encoder if operational experience proves it is warranted.

4. *Dodds' Recommendation to Modify the TCA.* The commenter submitted a "compromise" TCA design unofficially offered by the AOPA without withdrawing the proposal contained in their petition for rulemaking. It recommended an airspace configuration somewhat similar to the FAA's basic design but simplifies the specific areas covered and would limit certain areas ceilings at 6,000 or 7,000 feet. However, it also poses the need to modify some of the air traffic flow patterns currently being used and would adversely affect the efficiency of traffic flow in the entire San Diego terminal area. More importantly, it would also significantly reduce the TCA's ability to provide an adequate basis for positive control of all aircraft in the areas needing the enhanced degree of air transportation safety. The following discussion summarizes the Dodds proposal and provides the reasons the recommendations are not acceptable at this time:

a. Area A should not include a VFR corridor and only go up to 6,000 feet to permit overflight. The proposed VFR corridor is far too restrictive to be safe. Also, the tops of Areas B, J, and I should be at 6,000 feet and Area K at 7,000 feet, for overflight of the TCA. A primary benefit of this recommendation is to provide additional, non-TCA airspace for flights between the areas north of the TCA and Mexico.

The proposed VFR corridor allows northbound VFR flights from the south of the TCA, including departures from Brown Field to climb on course. The recommended change would require the same departure to turn and climb east or west (avoiding the Mexican Border) to sufficient altitude to be above 6,000 feet before proceeding north over Areas A, B, or I and 7,000 feet before continuing flight along the coastline on airway V–23. Other northbound flights also would have to climb above the 6,000- or 7,000-foot TCA ceiling. Flights from the north into Brown Field would have to reverse the flight path and descend within the narrow band of airspace between the TCA and the Mexican Border. Flights into Mexico would be required to fly over the TCA and then descend rapidly into Tijuana airport for the Mexican customs clearance before proceeding south. The primary impact of this would be borne by general aviation and other aircraft that are not transponder equipped.

The published holding patterns airspace areas for the east flow and west flow would be affected by those areas where the ceiling would be reduced to 6,000 or 7,000 feet (A, B, C, I, J, K, AND O). "Holding" of aircraft is normally accomplished at 5,000 to 12,000 feet. If this recommendation were adopted, aircraft would have to be held above the TCA airspace or at new holding fixes that would have to be established in outer areas or beyond. Holding at the outer fixes would be costly in fuel and time because of the distance, speed and low altitude operating requirements. Holding at the current published fixes would reduce the ability to separate all aircraft by eliminating the mix of controlled and uncontrolled traffic.

b. Raise the Area C floor from 3,500 feet to 3,800 feet to be consistent with the other floors and simplify the areas for pilots. The ceiling would remain at 12,500 feet.

The floors of "C" are based on the require outer fix crossing at 3,700 feet for the back course ILS approach for Runway 27. The 200-foot buffer provides the necessary measure of safety between VFR aircraft and those making an instrument approach. The recommended 3,800-foot crossing would require aircraft executing that instrument approach to temporarily exit the TCA airspace, thereby reducing the effectiveness of the TCA for separating controlled and uncontrolled aircraft in that area.

c. Eliminate Area H as a separate area and expand Area I into the Area H airspace to accommodate current procedures that have jets arriving from the east on a right downwind and radar vectored for the ILS to Runway 9.

While this suggestion provides the latitude necessary to ensure that Area I (as modified) would extend adequately to the west and south to accommodate arrivals to Runway 9 under current procedures and traffic flow, it would

still adversely affect other operations at Lindbergh field and NAS North Island. Because of traffic considerations, eastbound departures from Runway 27 normally must be vectored in this area before reaching an altitude at which they may be turned east. Both arrivals and departures from the NAS North Island are based on utilizing Area "H" as part of the TCA.

In weighing the benefits to be achieved in this corner of the TCA, consideration was given to the need for operational flexibility weighed against any burden of aircraft not using the TCA. The area involved is about ten miles from the coast-line over open waters not frequently used by general aviation aircraft or other aircraft not equipped for over-water flights. Since a significant contribution to the purposes of the TCA is achieved by including Area H within the TCA, the nominal burden on other aircraft is not a compelling reason for eliminating it as recommended.

d. Eliminate Area N as a separate area and expand Areas L and M into portions of Area N airspace; the floors of Area L (as modified) should be 2,800 feet and Area M (as modified) should be 4,800 feet. The ceiling of each would remain at 12,500 feet.

Area "N," in conjunction with Areas "L" and "M," is required for vectoring, sequencing, and separating departures and arrivals to and from the north. Further, these areas were designed to accommodate traffic flows to and from areas under the jurisdiction of adjacent ATC facilities. Arrivals and departure routes (civil and military) proceed through these areas. To change the design as suggested would impact traffic flows not only in the San Diego area but also in Coast Approach Control and the Los Angeles Center.

e. Eliminate Areas P and Q. TCAs aren't supposed to be for military aviation. A military operations area (MOA) should be chartered for NAS Miramar.

Areas P and Q are required to allow room for separating high performance military jets from other users of the terminal area. The concept of TCA does not automatically exclude military airports, particularly when including them within the positive control environment contributes significantly to providing the enhanced degree of air transportation safety, such as in the San Diego terminal area. During calendar year 1979, military pilots filed more than 20 reports of required evasive action involving uncontrolled VFR aircraft in or along the final approach of NAS Miramar. The Navy requested to be included in the TCA airspace. The request was reflected in the proposed TCA to ensure that potentially hazardous traffic conflicts involving military aircraft and civil aircraft could be reduced in the positive control environment.

The MOA concept recommended by the commenter would allow uncontrolled VFR flights to continue to transit these high density traffic areas, thereby permitting the existing hazard to continue without resolution. It also would fail to provide the enhanced degree of safety for passenger carrying civil aircraft.

f. Eliminate Area O and substitute a smaller, new area between 4,800 feet and 7,000 feet to accommodate arrivals from Los Angeles landing on Runway 27.

The commenter did not clearly specify where the new area would be located; the graphic provided depicts an area generally fitting the description but which is doubly labeled—one showing the altitudes 4,800 and 7,000 feet, the other indicating it would be part of the recommended MOA just discussed. If the latter is the suggestion, the previous discussion applies to it. If the suggestion is the former, the FAA proposed 6,800 to 12,500 feet area would be significantly reduced. That reduction would adversely affect both arrivals and departures, specifically Runway 9 departures turning north would have to remain below 7,000 feet for approximately 20 miles in order to stay within the TCA where separation from uncontrolled aircraft is provided. Arrivals for Runway 27 would have to descend prematurely to 7,000 feet at least 20 miles from the airport to enter the TCA from the north through the new area.

5. *Other Recommendations to Modify the TCA.* Some of the other commenters recommended modifications to the proposed TCA, which, while they differed in specific details, raise issues similar in material respects to those previously discussed. Those recommendations have similar attractive features and present the same alternatives to be weighed in evaluating their advantages and disadvantages. As attractive as many of those features are, as previously discussed, they would require significant tradeoffs with the other objectives of this rulemaking action, including deferral of an appropriate and timely response to the recognized need to provide safety enhancement in the San Diego terminal area.

Many of the comments recommending alternate configurations and procedures neglected to submit sufficient information of the anticipated impacts necessary for a more thorough evaluation of the recommendations. Detailed evaluations are needed before such recommendations could be implemented with any assurance they are responsive to local needs and consistent with the objective of providing the highest level of aviation safety in the area. In light of the existing air traffic situation in San Diego, it would not be appropriate to delay or withhold taking immediate, available action that has been subjected to thorough review and public participation while conducting evaluations of yet further alternatives that are recommended but not subjected to the public notice and comment procedures of rulemaking. However, based on future operational experience with this San Diego TCA, some of these suggestions may provide the basis for subsequent changes that are shown to be appropriate.

Economic Impacts

The FAA has thoroughly assessed the costs of establishing the San Diego TCA. A comprehensive economic assessment, covering the entire program as described in the Plan for Enhanced Safety was made available to attendees at informal airspace meetings held in San Diego on March 20–22, 1979, and was placed in the Regional and Washington dockets for public comment. The assessment includes system-wide assumptions concerning the impact of all 44 originally proposed new TCAs, including the San Diego, California, TCA proposal. Since seven of the original sites are no longer under current consideration, the cost impact system-wide is even less but the underlying assumptions are still applied to the remaining candidate sites. In addition, to determine whether these general assumptions are valid for the particular TCA airspace description proposed for San Diego, California, the FAA Western Regional Office prepared a detailed draft addition to the broad national study. This Regional economic assessment was appended to the national assessment and was also in the Regional and Washington dockets. The Regional assessment has been up-dated on the basis of comments received and information available to the FAA before adopting this amendment.

Environmental Assessments

In a manner similar to that described above for the national and local economic assessments, an environmental assessment was prepared, which addresses the overall national environmental effect of the 44 proposed TCAs. That assessment addresses the aircraft noise, aircraft emissions, and fuel consumption

impacts of the program as a whole, and concludes that these impacts would not significantly affect the quality of the human environment. That national assessment is in the Regional and Washington dockets. In addition, as with the economic study, the program-wide assessment has been supplemented with an environmental assessment prepared by the Regional Office, responding to the site-specific impacts of the San Diego, California, TCA proposal. This local assessment was likewise in both dockets for public comments and has been up-dated to reflect the proposed action of adopting this amendment.

Airspace Outside the United States

As part of this rule relates to the navigable airspace outside the United States, the notice announcing this rule was submitted in consonance with the International Civil Aviation Organization (ICAO) International Standards and Practices.

Applicability of International Standards and Recommended Practices by the Air Traffic Service, FAA, in areas outside domestic airspace of the United States, is governed by Article 12 and Annex 11 to the Convention on International Civil Aviation, which pertains to the establishment of air navigational facilities and services necessary to promote safe, orderly, and expeditious flow of civil air traffic. Their purpose is to ensure that civil flying on international air routes is carried out under uniform conditions designed to improve the safety and efficiency of air operations.

The International Standards and Recommended Practices in Annex 11 apply in those parts of the airspace under the jurisdiction of a contracting State, derived from ICAO, wherein air traffic services are provided and also whenever a contracting State accepts the responsibility of providing air traffic services over high seas or in airspace of undertermined sovereignty. A contracting State accepting such responsibility may apply the International Standards and Recommended Practices to civil aircraft in a manner consistent with that adopted for airspace under its domestic jurisdiction.

In accordance with Article 3 of the Convention on International Civil Aviation, Chicago, 1944, State aircraft are exempt from the provisions of Annex 11 and its Standards and Recommended Practices. As a contracting State, the United States agreed by Article 3(d) that its State aircraft will be operated in international airspace with due regard for the safety of civil aircraft.

Since this action involves, in part, the designation of navigable airspace outside the United States, the Administrator has consulted with the Secretary of State and the Secretary of Defense in accordance with the provisions of Executive Order 10854.

Immediate Implementation and Pilot Awareness

The purpose of this amendment in establishing a Group II TCA in the San Diego, California, terminal area, is to provide the highest degree of aviation safety as soon as practicable. It adopts an immediately available course of action based on the proposals contained in Airspace Docket 18605/79–AWE–17 to require positive air traffic control of all aircraft in the terminal airspace and thereby achieve enhanced safety and efficiency by reducing the potential for hazardous traffic conflicts. While publishing this amendment achieves legal notice of the existence of the regulatory requirements, effective implementation dictates that each pilot of an aircraft operating in the San Diego area become familiar with those requirements and that compliance be achieved in a timely manner. Pilot education is an important aspect of achieving the enhanced safety objectives.

In that connection, the FAA recognizes that pilots rely extensively on aeronautical charts for air navigation, as well as other aeronautical materials for familiarizing themselves with all available information concerning a particular operation. The FAA has worked with the National Oceanic and Atmospheric Administration, National Ocean Survey, in expediting production and distribution of a special VFR Terminal Area chart as soon as possible to fill the need for such a chart in conjunction with this amendment. Further, the San Diego TCA must also be depicted on other air navigation charts to ensure broader pilot awareness of the existence of the TCA. Revised enroute aeronautical charts are scheduled to be effective on May 15, 1980. In order to ensure timely and widespread communication of the existence of a Group II TCA in San Diego, the FAA has expedited chart production and distribution to have the necessary charts available to the operators and pilots affected as part of that charting cycle. Otherwise, the safety benefits of this amendment either would have to be delayed until the next regular visual series charting date (August 7, 1980) or to depend on a special issuance of charts during the effective period of the regular edition. While the FAA concludes that the safety benefits of this amendment should not be delayed until August for reasons of charting, it also recognizes the problems involved in providing new charts during the normal use period, that is before the expiration of the current Los Angeles sectional chart. However, the special VFR Terminal Area Chart coincides with the May 15 enroute charting cycle. The availability of the new charts will be given widespread publicity and announcement to aeronautical interests affected by this amendment.

Adoption of the Amendment and Denial of the AOPA Petition for Rulemaking

In consideration of the foregoing, the Federal Aviation Administration hereby takes the following actions:

(1) Notice is hereby given in accordance with Part 11 of the Federal Aviation Regulations (14 CFR Part 11) that the petition of the Aircraft Owners and Pilots Association, dated November 29, 1979, requesting the FAA to commence rulemaking proceedings to provide a special air traffic rule for the San Diego, California, terminal area is hereby denied.

(2) Section 71.401(b) of Part 71 of the Federal Aviation Regulations (14 CFR Part 71 as republished at 45 FR 669; January 2, 1980); is amended, effective May 15, 1980, by adding a new Group II Terminal Control Area to read as follows:

Subpart K—Terminal Control Areas

§ 71.401 Designation.

* * * * *

(b) Group II, Terminal Control Areas:

* * * * *

San Diego, Calif., Control Area

Primary Airports

1. San Diego, Calif. (Lindbergh Field), (Lat. 32°43'58" N., Long. 117°11'14" W.).

2. Miramar NAS, Miramar, Calif., (Lat. 32°52'30" N., Long. 117°08'15" W.).

Boundaries. Based on the Mission Bay VORTAC ("Mission Bay":MZB) (Lat. 32°46'57" N., Long. 117°13'29" W.) arcs, DME distances, and radials and the Miramar NAS TACAN (Lat. 32°52'11" N., Long. 117°09'14" W.).

Southern boundary of the San Diego TCA is 3 nautical miles north of the United States/Mexico border beginning at Lat. 32°33'00" W., Long. 117°31'00" W., and extending to Lat. 32°38'30" N., Long. 116°29'00" W.; the United States/Mexico border is referred to as "the border."

Area A. That airspace extending upward from the surface to and including 12,500 feet MSL within an area bounded on the west by a 5 statute-mile radius arc of Mission Bay, on the east by a 10-mile radius arc of Mission

Bay, on the north by the Mission Bay 325° and 099° radials and on the south by an extension of the Lindbergh Field/NAS North Island Control Zone line, excluding that airspace from 3,300 feet to 4,700 feet MSL in an area beginning at the Mission Bay 099° radial and bounded on the west by Interstate 5 south to Interstate 8 thence direct to Lat. 32°44'15" N., Long. 117°12'30" W., direct to Lat. 32°41'00" N., Long. 117°10'45" W., to intercept and proceed along the Silver Strand Highway to the Mission Bay 10-mile radius arc, and on the east via Highway 163 south to Interstate 5 thence south via Interstate 5 to the Mission Bay 10-mile radius arc.

Area B. That airspace extending upward from 1,800 feet MSL to and including 12,500 feet MSL between the Mission Bay 10-mile and 15-mile radii arcs bounded on the north by the Mission Bay 099° radial and on the south by an extension of the Lindbergh Field/NAS North Island Control Zone line.

Area C. That airspace extending upward from 3,500 feet MSL to and including 12,500 feet MSL between the Mission Bay 15-mile and 20-mile radii arcs bounded on the north by a line between the Mission Bay 099° and 090° radials and on the south by the Lindbergh Field/NAS North Island Control Zone line extension to 3 miles north of the border thence via the Mission Bay 17.8-mile radius arc to the Mission Bay 120° radial thence east to the Mission Bay 115° radial and the 20-mile radius arc intersection.

Area D. That airspace extending upward from 4,800 feet MSL to and including 12,500 feet MSL between the Mission Bay 20-mile and 23-mile radii arcs bounded on the north by a line between the Mission Bay 090° and 087° radials and on the south from the 23-mile radius arc intersection at 3 miles north of the border, to the Mission Bay 115° radial at the 20-mile radius arc intersection.

Area E. That airspace extending upward from 5,800 feet MSL to and including 12,500 feet MSL between the Mission Bay 23-mile and 28-mile radii arcs bounded on the north by a line between the Mission Bay 081° and 084° radials and on the south by the line 3 miles north of the border.

Area F. That airspace extending upward from 7,800 feet MSL to and including 12,500 feet MSL between the Mission Bay 28-mile radius arcs and by a line 3 miles north of the border to Long. 116°29'00" W., then along Long. 116°29'00" W., to Lat. 32°58'00" N., bounded on the north by a line between the Mission Bay 084° radial and the Mission Bay 068° radial/36.5 DME fix and by a line between the Mission Bay 068° radial/36.5 DME fix and Lat. 32°58'00" N.

Area G. That airspace extending upward from 7,800 feet MSL to and including 12,500 feet MSL bounded on the west by a line from the Mission Bay 17.8-mile radius arc between Lindbergh Field/NAS North island Control Zone line extension intersecting 3 miles north of the border and the Mission Bay 120° radial, on the north by a line between the Mission Bay 120° radial/17.8 DME fix and the Mission Bay 115° radial/20 DME fix, on the east by a line between the Mission Bay 115° radial/20 DME fix and Mission Bay 23-mile radius arc at the 3-mile line north of the border and on the south by the 3-mile line north of the border.

Area H. That airspace extending upward from 5,800 feet MSL to and including 12,500 feet MSL bounded on the west by a line between Lat. 32°33'00" N., Long. 117°30'45" W., and Lat. 32°43'33" N., Long 117°36'32" W., to an extension of the Lindbergh Field/NAS North Island Control Zone line at the Mission Bay 10-mile radius arc thence counterclockwise to the eastern extension of the Lindbergh Field/NAS North Island Control Zone line thence via that extension to the line 3 miles north of the border thence via that line to the point of beginning.

Area I. That airspace extending upward from 2,800 feet MSL to and including 12,500 feet MSL bounded on the north and east by an extension of the Lindbergh Field/NAS North Island Control Zone line and on the south by the 10-mile radius arc of Mission Bay, excluding that airspace from 3,300 feet to 4,700 feet MSL in the corridor excluded under the description in Area A.

Area J. That airspace extending upward from 4,800 feet MSL to and including 12,500 feet MSL bounded on the south beginning at the Mission Bay VORTAC thence via the Mission Bay 079° radial to the 15-mile DME fix thence via a line to the Mission Bay 087° radial/23 DME fix thence counterclockwise on the 23-mile arc to the Mission Bay 081° radial thence via a line to the Mission Bay 065° radial/10 DME fix extending to the NAS Miramar Control Zone clockwise to the south and along an extension of the NAS Miramar Control Zone line westward to the Mission Bay 325° radial and along the 325° radial to the point of beginning.

Area K. That airspace extending upward from 1,800 feet MSL to and including 12,500 feet MSL between the Mission Bay 5-mile and 13-mile radii arcs bounded on the northwest by the Mission Bay 325° radial and on the south by the Lindbergh Field/NAS North Island Control Zone west extension.

Area L. That airspace extending upward from 2,800 feet MSL to and including 12,500 feet MSL between the Mission Bay 13-mile and 21-mile radii arcs bounded on the northwest by the Mission Bay 325° radial, on the south by the Lindbergh Field/NAS North Island Control Zone west extension to Lat. 32°43'33" N., Long. 117°36'32" W., and on the west to Lat. 32°46'45" N., Long 117°38'22" W., at the intersection of the 21-mile radius arc of Mission Bay.

Area M. That airspace extending upward from 4,800 feet MSL to and including 12,500 feet MSL from the Mission Bay 21-mile radius arc beginning at Lat. 32°46'45" N., Long. 117°38'22" W., thence via a line to Lat. 32°53'00" N., Long. 117°41'40" W., thence via a line to Lat. 33°05'00" N., Long. 117°51'55" W., thence via a line to Mission Bay 325° radial/31.5 DME fix thence via 325° radial to the Mission Bay 21-mile DME fix thence via the 21-mile radius arc counterclockwise to point of beginning.

Area N. That airspace extending upward from 6,800 feet MSL to and including 12,500 feet MSL beginning at the Mission Bay 325° radial/16-mile DME fix thence via the Mission Bay 325° radial to the Mission Bay 31.5 DME fix thence direct to the Mission 357° radial/22.5 DME fix thence direct to the Mission Bay 047° radial/10.5 DME fix thence counterclockwise via the Miramar NAS Control Zone to the Miramar TACAN 300° radial thence direct to point of beginning.

Area O. That airspace extending upward from 1,500 feet MSL to and including 2,500 feet MSL and that airspace extending upward from 6,800 feet MSL to and including 12,500 feet MSL beginning at the Mission Bay 325° radial and a line extended from the NAS Miramar Control Zone thence via the Mission Bay 325° radial to the Mission Bay 16-mile DME fix thence direct to the intersection of the Miramar TACAN 300° radial and the Miramar NAS Control Zone thence south via Interstate 805 to the southern edge of the Miramar NAS Control Zone thence westward via an extension of the Miramar NAS Control Zone line to the point of beginning.

Area P. That airspace extending upward from the surface to and including 3,000 feet MSL and that airspace from 6,800 feet MSL to and including 12,500 feet MSL within a 5 statute-mile radius arc of NAS Miramar, excluding that area south of the NAS Miramar Control Zone and that area west of Interstate 805.

Area Q. That airspace extending upward from the surface to and including 6,000 feet MSL within 2 statute miles on each side of the NAS Miramar TACAN 078° radial extending from the 5 statute-mile radius zone to 10 miles east of the TACAN.

(Secs. 307, 313(a), and 1110, of the Federal Aviation Act of 1958 (49 U.S.C. §§ 1348, 1354(a), and 1510); Executive Order 10854 (24 FR 9565); Sec. 6(c), Department of Transportation Act (49 U.S.C. § 1655(c))

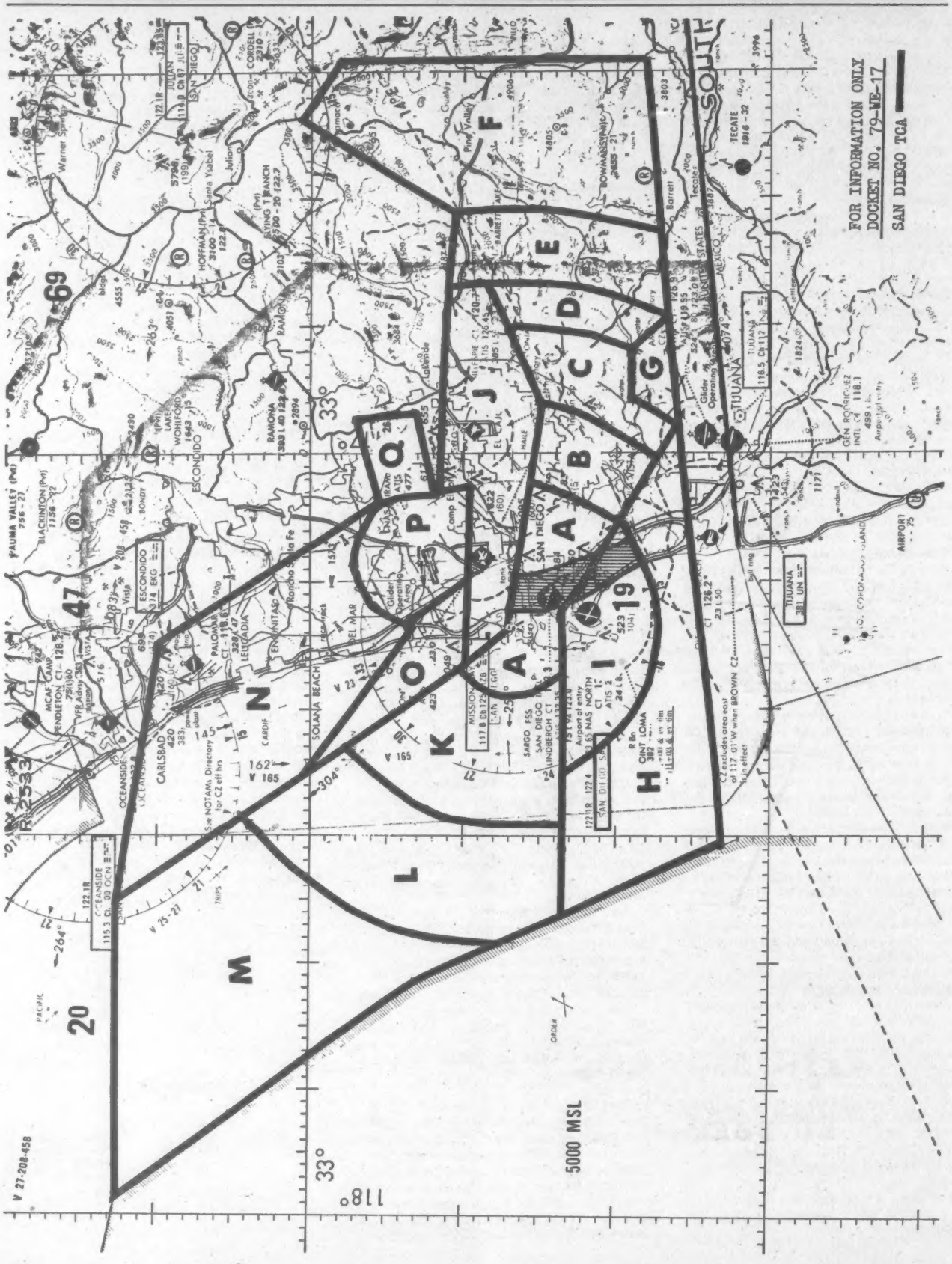
Note.—The FAA has determined that this document involves a regulation which is not significant under Executive Order 12044, as implemented by DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). However, establishment of this terminal control area in concert with the proposed establishment or alteration of many other terminal control areas has been determined to be significant. Therefore, this action is included in the final evaluation prepared in conjunction with that comprehensive action. Copies of the evaluation are in the Washington and Regional dockets, and may be obtained by contacting the person identified above under the caption "FOR FURTHER INFORMATION CONTACT * * *"

Issued in Washington, D.C. on March 15, 1980.

Langhorne Bond,

Administrator.

BILLING CODE 4910-13-M


FOR INFORMATION ONLY
DOCKET NO. 79-WE-17
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5000 MSL
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MCAF CAMP PENDLETON
SOLANA BEACH
ENCINITAS
RAMONA
JULIAN
LAKE WOHLFORD
PAUMA VALLEY
BLACKINTON
SAN DIEGO INTL
LINDBERGH FLD
ONT LOMA
NAS NORTH ISLAND
MISSION BAY
GEN RODRIGUEZ INTL
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SAN DIEGO TRACON
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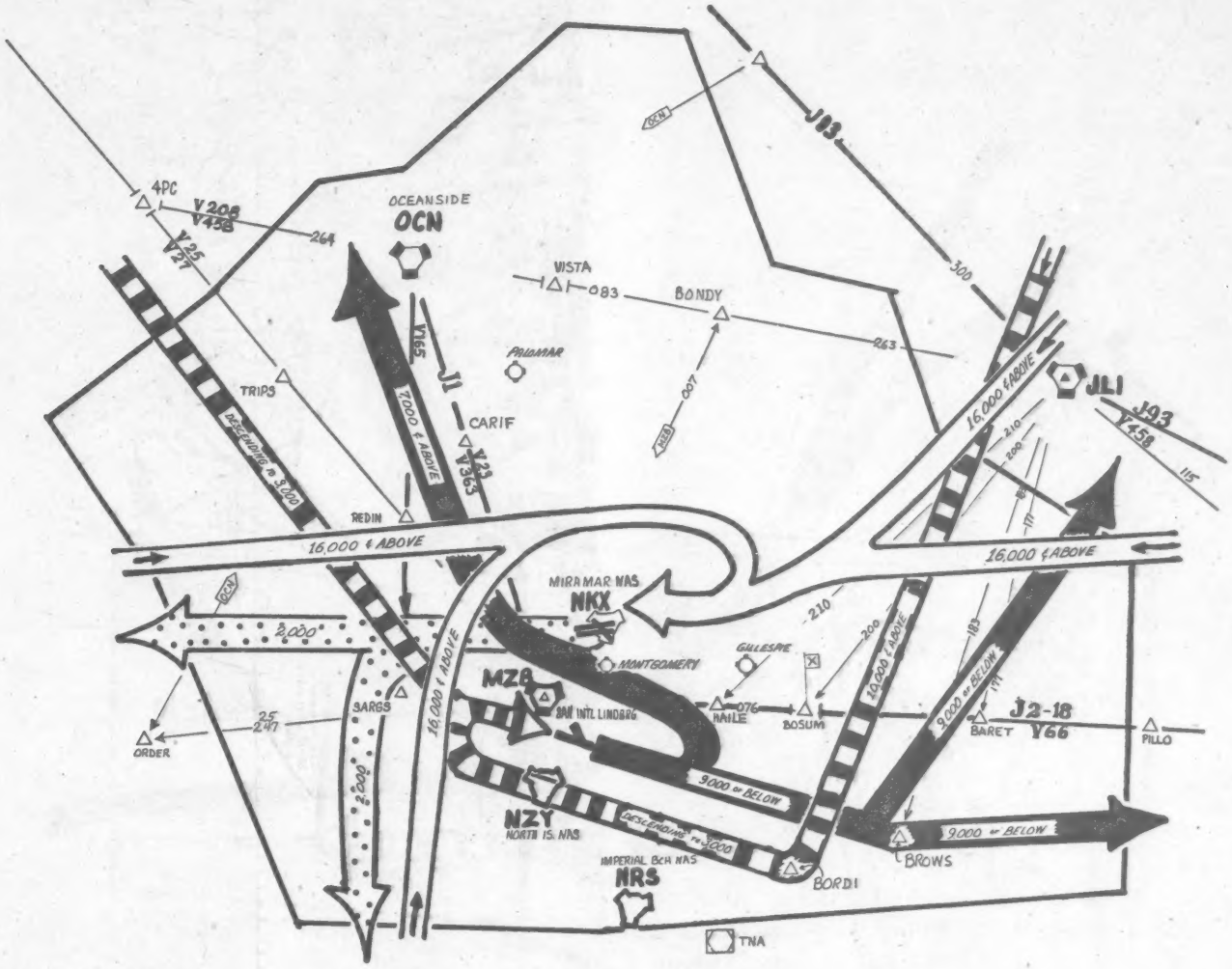

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SAN DIEGO TCA

Rny 9/27-9400ft. ARRIVALS DEPARTURES
Rny 13/31-3439ft. LINDBERGH

ARRIVALS DEPARTURES
MIRAMAR NAS (NKX)

Rny 24R/6L-12000 ft
Rny 24L/6R-8000 ft
Rny 10/28-6000 ft

SAN DIEGO TRACON
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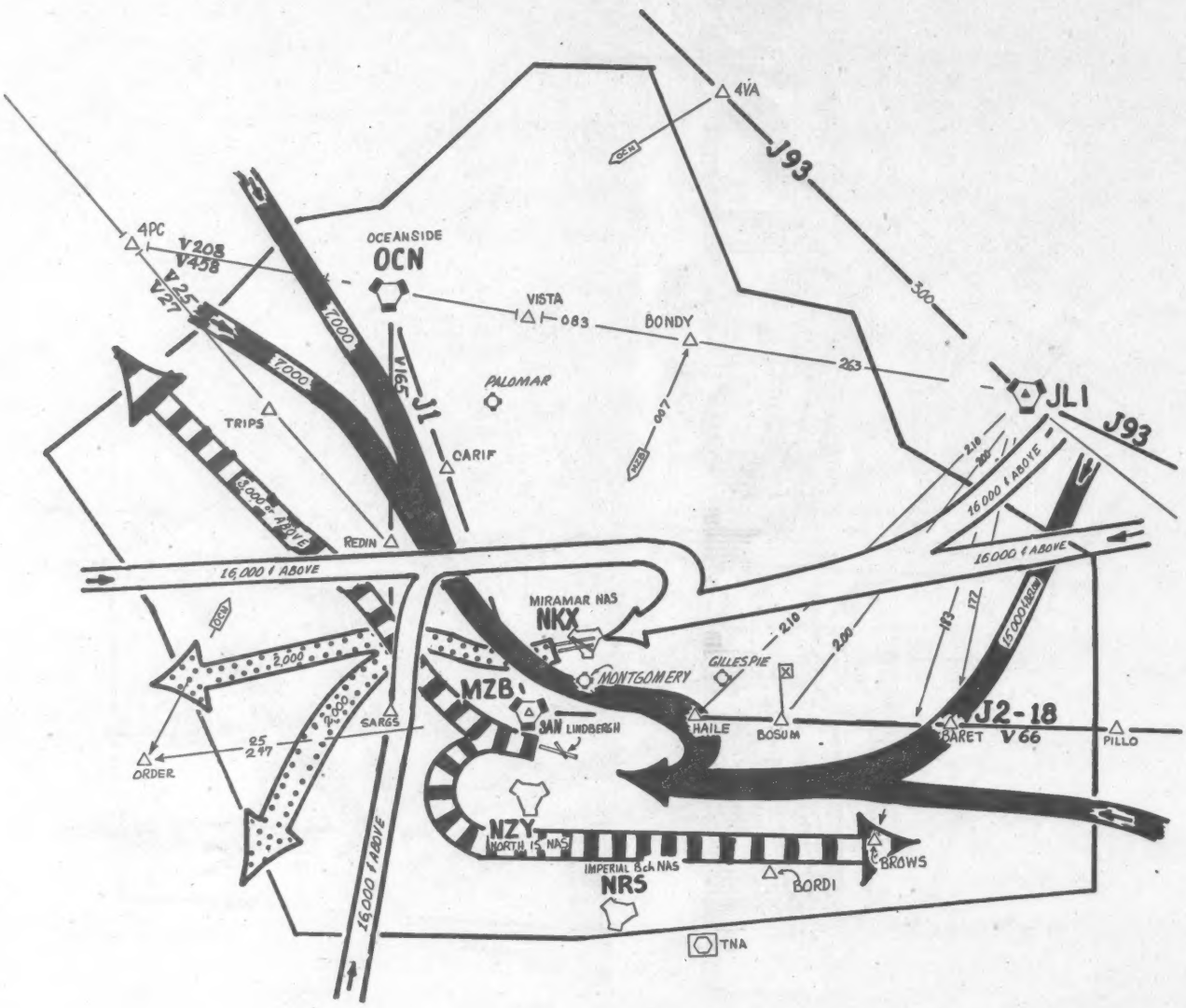

FOR INFORMATION ONLY
DOCKET NO. 79-WE-17
SAN DIEGO TCA

Rny 9/27 9400 ft.
Rny 13/31 3439 ft.

ARRIVALS DEPARTURES
LINDBERGH

ARRIVALS DEPARTURES
MIRAMAR NAS (NKX)

Rny 24R/6L - 12000 ft.
Rny 24L/6R - 8000 ft.
Rny 10/28 6000 ft.

[FR Doc. 80-8623 Filed 3-19-80; 8:45 am]
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